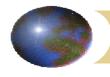


# US FDA Medical Device Premarket Procedures

Presenter: Timothy A. Ulatowski VP, NSF Health Sciences



- Introductory Remarks
- Background on FDA medical device premarket organization
- A few basics of FDA medical device laws pertaining to premarket procedures
- Some background on pathways to placing a device on the market in the US



#### Overview Continued

- Premarket approval
- Premarket notification
- Available FDA reference material
- Questions



#### Introductory Remarks

- Listening to presentations on laws and regulations is not one of the most stimulating things we do in life
- This is a highly condensed discussion of very detailed technical topics that are not static
- There are more commonalities and fewer differences globally; CTD, IMDRF



#### Introductory Remarks

- I hope at the end of today you have a basic understanding of FDA's premarket processes; not mastery
- Through international collaboration on premarket topics we help ensure global safety and effectiveness of medical devices









ITA-FDA Medical Devices Regulatory Capacity Building Training Program for International Medical Devices Regulators

March 27 - 28, 2014; San Francisco, California



### FDA Premarket Organization

- Federal regulation of devices is centralized in the FDA; FDA is the competent authority
- FDA consists of product centers; one is Center for Devices and Radiological Health (CDRH)
- CDRH consists of 7 offices; 7 have premarket activities:



#### FDA Premarket Organization

- Device Evaluation\*
- In Vitro Diagnostics and Radiological Health\*
- Surveillance and Biometrics assists
- Science and Engineering Labs assists
- Compliance assists
- Management Operations supportive
- Communication, Education supportive

  ITA-FDA Medical Devices Regulatory Capacity Building Training Program for International Medical Devices Regulators

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#### FDA Premarket Organization

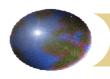
- ODE and OIVD divided into divisions, divisions divided into branches; branches are the interface with manufacturers and where review staff reside
- FDA relies on its own staff, external experts, fellows, third parties, and others to assist with premarket review



- Federal Food, Drug and Cosmetic Act; 1976 and other device amendments
- Prohibited Acts (some) You cannot...
  - Put a device in commerce that does not have premarket approval or premarket notification, if required
  - You must comply with quality system requirements



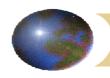
- Establishment of three Classes of devices; fundamental to premarket processes
  - □ Class I subject to general controls
  - □ Class II general and special controls
  - Class III general controls and premarket approval



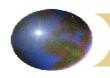
Meeting requirements of the class provides reasonable assurance of safety and effectiveness



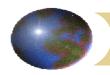
- General Controls (not all listed)
  - Registration/listing
  - Quality systems
  - Adulteration and misbranding
  - Reports (MDRs, corrections and removals)
- Special controls as FDA determines and made part of <u>device type</u> class regulation



- Classification of <u>device types</u> on market before 1976 is based on rules.
  - Class I general controls sufficient or not a risk
  - Class II general controls alone insufficient and there is information to establish special controls
  - Class III General controls insufficient, cannot make and special control and high degree of risk
- See 21 CFR 800 series for classifications



- Classification of post 1976 devices:
  - Class III unless
  - "Substantially equivalent" to pre 1976 device or to a post 1976 device that does not require premarket approval
- Reclassification process (topic for another day)



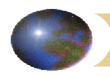
- Important classification definitions:
  - "Valid scientific evidence"

"safe"

"effective"



- "Valid scientific evidence"
  - Well controlled, partially controlled, no matched control
  - Well documented case histories
  - Significant experience
- Not valid evidence isolated cases, random experience



#### "Safe"

- Based on valid scientific evidence the probable benefits when used according to labeling outweigh any probable risks
- Absence of unreasonable risk



#### "Effective"

Based on valid scientific evidence in a significant portion of the target population when the device is used according to labeling the device will provide clinically significant results



# Determining Class



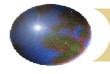




Recalls & Alerts

Approvals & Clearances

Report a Problem



# Determining Class

#### **Product Classification**

FDA Home Medical Devices Databases This database includes: a list of all medical devices with their associated classifications, product codes, FDA premarket review organizations, and other regulatory information. Learn More... Help Download Files Search Database Product Code Device Review Panel Regulation Number SubmissionType Third Party Elligible Device Class Go to Quick Search Clear Form Search

#### Other Databases

- 510(k)s
- Adverse Events (MAUDE)
- CDRH FOIA Electronic Reading Room
- CFR Title 21
- CLIA
- Inspections
- Medsun Reports
- Premarket Approvals (PMAs)
- Post-Approval Studies
- Postmarket Surveillance Studies
- Radiation-Emitting Products
- Radiation-Emitting Electronic Products Corrective Actions
- Recalls
- Registration & Listing
- Standards
- Total Product Life Cycle
- X-Ray Assembler



# Determining Class

#### Subpart C--General Hospital and Personal Use Monitoring Devices

- § 880.2200 Liquid crystal forehead temperature strip.
- § 880.2400 Bed-patient monitor.
- § 880.2420 Electronic monitor for gravity flow infusion systems.
- § 880.2460 Electrically powered spinal fluid pressure monitor.
- § 880.2500 Spinal fluid manometer.
- § 880.2700 Stand-on patient scale.
- § 880.2720 Patient scale.
- § 880.2740 Surgical sponge scale.
- § 880.2800 Sterilization process indicator.
- § 880.2900 Clinical color change thermometer.
- § 880.2910 Clinical electronic thermometer.
- § 880.2920 Clinical mercury thermometer.
- § 880.2930 Apgar timer.



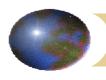
TITLE 21--FOOD AND DRUGS
CHAPTER I--FOOD AND DRUG ADMINISTRATION
DEPARTMENT OF HEALTH AND HUMAN SERVICES
SUBCHAPTER H--MEDICAL DEVICES

PART 880 -- GENERAL HOSPITAL AND PERSONAL USE DEVICES

Subpart C--General Hospital and Personal Use Monitoring Devices

Sec. 880.2500 Spinal fluid manometer.

- (a) Identification. A spinal fluid manometer is a device used to measure spinal fluid pressure. The device uses a hollow needle, which is inserted into the spinal column fluid space, to connect the spinal fluid to a graduated column so that the pressure can be measured by reading the height of the fluid.
- (b) Classification. Class II (performance standards).



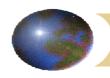
### Pathways to the Market





### Pathways to the Market

- Foundation for safety and effectiveness and source of marketing submission, if needed, is the **technical file** created, maintained and updated by the manufacturer
- Quality system regulation (and standard) and risk management standard: design, testing, production and postmarket processes



# Pathways - Before Submission

- Clinical information may be needed for validation purposes and perhaps submission to FDA
- Sources:
  - Literature
  - Clinical experience registries, MDRs...
  - Clinical investigation IDE study



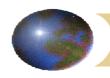
# Pathways – Before Submission

- Requirements for shipment of devices to conduct investigational studies contained in IDE regulation, 21 CFR Part 812.
- Foreign studies not involving shipment from US not subject to FDA jurisdiction
- Human subject protections vital



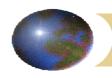
#### Pathways - Three Paths

- No submission "exempt devices" –
- Class I (93%), several Class II (8%)
- Premarket notification [510(k)] devices not exempt, not requiring premarket approval
- 7% Class I, 92% Class II, (very few Class III\*)
- Premarket approval (PMA) Class III



# Pathways – Exemption Void

Exemption no longer applies when new device compared to the generic devices in the exempt class: has new intended use or different fundamental technology, IVD with certain claims (21 CFR §§862.9, 864.9), or as specified in classification regulation



#### Pathways – Also No Submission

- Exempt devices:
  - Unfinished devices, devices not sold in US, custom devices, veterinary devices, private label devices covered by another 510(k), pre-1976 devices still on the market



#### Premarket Approval Path (PMA)

- Class III device by classification regulation or a "not substantially equivalent" device as determined as a result of a 510(k) submission
- PMA regulation is 21 CFR Part 814
- Submission similarities in other countries (IMDRF)



- How does manufacturer know what to submit to FDA in a PMA?
  - Technical file is guided by QS regulation, prior PMA submissions, FDA guidance, standards, and IDE process
  - FDA provides input in Pre-IDE meeting, pre-PMA meeting

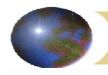


#### PMA Process - What to Submit

#### Requests for Feedback on Medical Device Submissions: The Pre-Submission Program and Meetings with Food and Drug Administration Staff

# Guidance for Industry and Food and Drug Administration Staff

Document issued on: February 18, 2014



#### PMA Process - What to Submit

#### **Q-Submission Types**

Q-Submission Type	Meeting	Timeframe for Meeting/Teleconference (from receipt of submission)
Pre-Submission*	Upon request	75-90 days**
Informational Meeting	Yes	90 days
Study Risk Determination	No	N/A
Agreement Meeting	Yes	30 days or within time frame agreed to with sponsor
Determination Meeting	Yes	Date for meeting agreed upon within 30 days of request
Submission Issue Meeting	Yes	21 days
PMA Day 100 Meeting	Yes	100 days (from filing of PMA)



#### PMA Process - Guidance

#### Device Advice: Comprehensive Regulatory Assistance

 Guidance Documents (Medical Devices and Radiation-Emitting Products)

Cross-Center Guidance Documents

OC Guidance

OCD Guidance

OCER Guidance

ODE Guidance 2010 - 2014

ODE Guidance 1998 - 2009

ODE Guidance 1976 - 1997

OIR Guidance

OSB Guidance

OSEL Guidance

Radiation-Emitting Products Guidance

#### Guidance Documents (Medical Devices and Radiation-Emitting Products)

Search the Guidance Documents Section

SEARCH

CDRH Industry: Get e-mail updates



We have recently redesigned the FDA Web site. As a result, some Web links (URLs) embedded within guidance documents are no longer valid. If you find a link that does not work, please try searching for the document using the document title.

#### About Guidance

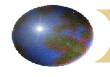
- What is guidance?
- Abbreviations of CDRH offices producing guidance documents

#### Resources

- Guidance documents from FDA
- CDRH Fiscal Year 2014 (FY 2014)
   Proposed Guidance Development

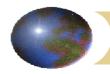
#### **Additional Information**

- Blue Book Memos ODE Guidance Memoranda
- Recent Medical Device Guidance Documents
- Most Popular Medical Device Guidance Documents

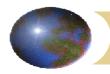


#### PMA Process- Standards

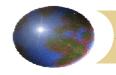
Search Database	<u></u> н	elp
Standards Organization	All Standards Organizations ‡	
Standard Designation Number Note: numbers only, e.g., 14971, 60601-1		
Standards Title or Keywords Note: do not include standard designation number	(30 chars. max)	
Specialty Task Group Area	All Categories ‡	
Product Classification Product Code e.g., for vertical standard searches	Regulation Number (e.g., 888.1111)	
Type of Standard (use ctrl button with mouse click to select up to 3 types, e.g., Horizontal, National, Materials Specification)	All Standard Types Vertical Test Methods National  FR List Publication Date to  FR List Publication Date  FR List Publication Date  FR List Publication Date  FR List Publication Date  FR List Publication Date	
Quick Search	Clear Form Search	)



- Contents of a PMA, 21 CFR §814.20
  - Administrative information
  - Summary: indications, description, alternatives, marketing history, summary/conclusions of studies
  - Complete description: device, properties, principles of operation, manufacturing
  - Standards used



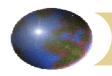
- Contents continued
  - Technical sections: preclinical, engineering, clinical
  - Bibliography
  - Labeling
  - Financial certification, environmental assessment



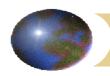
- Two types of PMAs: traditional or modular
- Filing review by FDA
- Preapproval facility/BIMO inspection often required
- FDA review may result in questions
- FDA substantive review is followed by expert panel evaluation and recommendations



- FDA Actions on a PMA, 180 day review cycle resulting in
  - Approved
  - Approvable substantially meets requirements
  - Not approved major deficiencies and measures to place in approvable form
  - Denial of approval major deficiencies of a type that may not be correctable

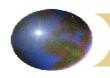


- FDA may withdraw or suspend approval of a device
- Approval order contains any requirements pertaining to device such as annual reports, postmarket studies, specific labeling requirements



### PMA Process- Supplements

PMA supplements are required for changes affecting safety and effectiveness such as new indications, certain labeling changes, new facilities, certain change in performance, specs, sterilization, packaging...



### PMA Process- Supplements

- Changes not affecting safety and effectiveness are reported in annual report or 30 day notice
- labeling and manufacturing changes enhancing safety are submitted as supplements but may be initiated immediately.



### PMA Process- Supplements

- Manufacturing Changes affecting safety and effectiveness submit as 30 day notices/135 day supplements
- FDA guidance on supplements, 30 day notices, preapproval inspections
- "Amendments" are submissions to PMAs or supplements prior to final decision



Other Class III processes will not be addressed in this training because of their limited use:

Product development protocol (PDP)
Humanitarian Use Device (HDE)



#### PMA Special Considerations

#### Please note: As of October 1, 2002, FDA charge

- Biocompatibility
- Color Additives
- Combination Products
- Electromagnetic Compatibility
- Electronic Submissions
- Environmental Impact Considerations
- Expedited Review
- Expiration Dating
- In Vitro Diagnostic (IVD) Products
- Master Files
- Radiation Emitting Products
- Software
- Standards
- Sterility



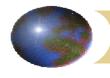
- Imported Class III device must be PMA approved
- Export of PMA approved devices CFGs
- Export of unapproved Class III devices
  - Two methods details in 802 and 801(e)(2) of the law

- Guidance for Industry and FDA Staff 30-Day Notices, 135-Day Premarket Approval (PMA)
   Supplements and 75-Day Humanitarian Device Exemption (HDE) Supplements for
   Manufacturing Method or Process Changes
- Acceptance of Foreign Clinical Studies
- Assessing User Fees: PMA Supplement Definitions, Modular PMA Fees, BLA and Efficacy Supplement Definitions, Bundling Multiple Devices in a Single Application, and Fees for Combination Products
- Balloon Valvuloplasty Guidance For The Submission Of an IDE Application and a PMA Application (Text Only)
- Bioresearch Monitoring Agreement for PMAs and PDPs February 23, 1998
- Guidance for Industry and FDA Staff Class II Special Controls Guidance Document:
   Bone Sonometers
- Color Additive Petitions (PDF Only) (PDF 91KB)
- Continued Access to Investigational Devices During PMA Preparation and Review July 15, 1996 (Blue Book Memo) (D96-1) (Text Only)

- Distribution and Public Availability of Premarket Approval Application Summary of Safety and Effectiveness Data Packages - October 10, 1997 (P97-1) (Text Only)
- Early Collaboration Meetings Under the FDA Modernization Act (FDAMA); Final Guidance for Industry and for CDRH Staff
- Guidance for Industry and Food and Drug Administration Staff Priority Review of Premarket Submissions for Devices
- Guidance for Industry and Food and Drug Administration Staff FDA and Industry Actions on Premarket Approval Applications (PMAs): Effect on FDA Review Clock and Goals
- Guidance Document for the Preparation of IDE and PMA Applications for Intra-Articular Prosthetic Knee Ligament Devices
- Statistical Guidance on Reporting Results from Studies Evaluating Diagnostic Tests
- Guidance for Industry and FDA Staff: Bundling Multiple Devices or Multiple Indications in a Single Submission
- Guidance on PMA Interactive Procedures for Day-100 Meetings and Subsequent Deficiencies - for Use by CDRH and Industry

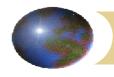
- Guidance for Industry and for FDA Reviewers: Guidance on Section 216 of the Food and Drug Administration Modernization Act of 1997
- Guidance for Industry Supplements to Approved Applications for Class III Medical Devices: Use of Published Literature, Use of Previously Submitted Materials, and Priority Review (Text Only)
- Panel Report and Recommendations on PMA Approvals #P86-5 (blue book memo) (Text Only)
- Panel Review of Premarket Approval Applications #P91-2 (blue book memo) (Text Only)
- PMA Compliance Program #P91-3 (blue book memo) (Text Only)
- Post Approval Studies Status
- PMA Review Statistical Checklist (PDF Only) (PDF 69KB)
- Guidance for Industry and Food and Drug Administration Staff Acceptance and Filing Reviews for Premarket Approval Applications (PMAs) (PDF - 370KB)

- Premarket Approval Application Modular Review
- Premarket Approval Applications (PMA) for Sharps Needle Destruction Devices; Final Guidance for Industry and FDA
- Premarket Assessment of Pediatric Medical Devices
- Quality System Information for Certain Premarket Application Reviews; Guidance for Industry and FDA Staff
- Real-Time Premarket Approval Application (PMA) Supplements
- The Least Burdensome Provisions of the FDA Modernization Act of 1997: Concept and Principles; Final Guidance for FDA and Industry
- Threshold Assessment of the Impact of Requirements for Submission of PMAs for 31 Medical Devices Marketed Prior to May 28, 1976 (PDF Only) (PDF - 546KB)
- Guidance for Industry and Food and Drug Administration Staff User Fees and Refunds for Premarket Approval Applications and Device Biologics License Applications



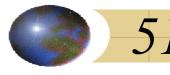
## 510(k) Path - What is a 510(k)

- Premarket Notification
- Section 510(k) of FDA law
- See 21 CFR Part 807, Subpart E
- Marketing <u>clearance</u> application
- Based on "substantial equivalence" to legally marketed device for which a PMA is not required



# 510(k) Classifies a New Device

- New device is classified by substantial equivalence (SE), or not equivalence (NSE)
- If SE then new device is same class as "predicate" device
- If NSE then it is Class III (it is also Class III until an SE decision)



# 510(k) Predicate

- Legally marketed device to which submitter claims equivalence
- Predicate does not have to be manufactures own device
- FDA guidance on selecting a predicate
- Also "reference" devices; technical aspect



Device advice on www.fda.gov

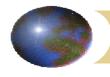
#### **How To Find A Predicate Device**

Introduction

Postamendments Device

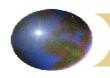
Preamendments Device

How to Search for a Predicate Device



## 510(k) Required When -

- Introducing a new device
- Making a significant change to a device: labeling, technology/engineering/performance, materials
- FDA guidance on changes to devices



#### K97-1 Guidance

JAN 1 0 1997

510(k) Memorandum #K97-1

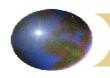
Date

From

Director, Office of Device Evaluation

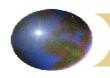
Subject

Deciding When to Submit a 510(k) for a Change to an Existing Device



### Who Must Submit 510(k)

- Manufacturers
- Specification developers
- Repackagers who change device
- \* Relabelers who change intended use



### Who Does Not Submit 510(k)

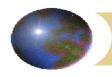
- Private label distributor:
  - distributed by ..."
  - "manufacturer for ..."

Repackager who doesn't alter device or labeling



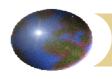
## Different Types of 510(k)s

- Traditional 510(k) addresses all content requirements and includes all necessary data
- Abbreviated 510(k) relies on guidance, special controls, standards
- Special 510(k) change to manufacturer's marketed device, summary of changes



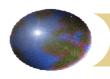
### Traditional 510(k) Contents

- Administrative information
- Classification name, CFR number, class, "product code"
- Common and proprietary name/model
- Indications
- Truthful/accurate statement



## Traditional 510(k) Contents

- Labeling
- Standards statement
- Financial certification
- Predicates/reference device(s) and comparisons
- Data (preclinical, engineering, clinical)



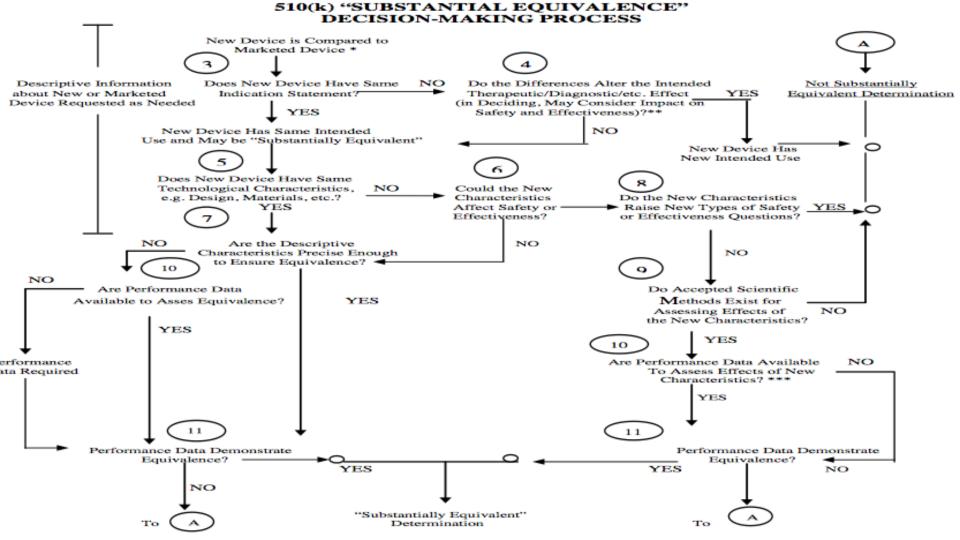
## Traditional 510(k) Contents

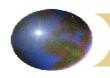
- 510(k) statement/summary
- Class III certification
- Sterilization information
- Software information
- **OTHER INFORMATION FDA REQUESTS**



## FDA SE Decision Algorithm

- FDA's has method to determine whether the new device is "substantially equivalent" to the claimed predicate device.
- Embedded in the law but elaborated by FDA in guidance. Decision flow chart completed by FDA but submitters often include in submission a suggested highlighted flow chart





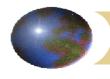
### Abbreviated 510(k) Contents

- Submitter elects to submit summary reports on the use of guidance, special controls, and declarations of conformity to standards to expedite the review
- Describe in detail any deviations from the above documents and reasons.



### Special 510(k) Contents

- Contents in many respects are similar to a traditional 510(k) but the focus is on the specific change
- Include a "concise summary" of related design control activities and declaration of conformance to design controls: risk analysis, verification/validation test description



## Review process

- 90 day review cycle
- Submission filing type review
- Usually one main FDA reviewer who can rely on any other inputs within FDA
- Reviewer may request additional information by letter, phone, or electronic means

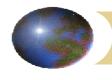
# FDA Decisions on 510(k)

- Request for additional information
- Withdrawn for lack of response
- Not equivalent order
- Substantially equivalent order



If SE then proceed to market

If NSE then submit a PMA, a "De Novo", correct the cause for NSE, if possible, or appeal (We won't discuss De Novo)



## 510(k) Special Issues

- A firm may not BOTH manufacture and distribute a new device without their own 510(k)
- A device not in final form (unfinished), or in final form but not for sale does not need a 510(k)

# 510(k) Guidance -Forms

#### 510(k) Forms

List of forms associated with Premarket Notification (510[k]) submissions

- 510(k) Pre-Review Form
- Exempt Device Review Form
- Acceptance Checklists for Traditional, Abbreviated, and Special 510(k)s
- 510(k) Review Template
- 510(k) Review Template Instructions
- 510(k) Cover Sheet Memorandum
- 510(k) "Substantial Equivalence" Decision Making Process
- Standards Data Form for Abbreviated 510(k)s

# 510(k)Guidance - Forms

- Sterile Devices in Premarket Notification [510(k)] Submissions
- Description of 510(k) "Substantial Equivalence" Decision-Making Process (Accessible Text)
- Premarket Notification Class III Certification and Summary
- Premarket Notification Truthful And Accurate Statement
- Premarket Notification 510(k) Statement
- Required Elements for a Declaration of Conformity to a Recognized Standard
- 510(k) Indications For Use Form (PDF 1.7MB)



- Traditional, Abbreviated, Special 510(k) methods
- Changes to devices
- Predicates
- Product specific guidance
- Software guidance...